

CLAIMS

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1. Peptide, immunogenic with lymphocytes directed against metastatic mélanomas, characterized in that it comprises at least part of the amino-acid sequence of SEQ.ID.No. 1 wherein the amino-acid at position 2 or 8 is substituted.
 2. Peptide according to claim 1, wherein at position 2 Threonine is substituted by Isoleucine, Leucine or Valine.
 3. Peptide according to any of claims 1-2, wherein at position 8 Glutamine is substituted by Alanine.
 4. Peptide according to any of claims 1-3, characterized in that it comprises the amino-acid sequence of SEQ.ID.No.: 2-8.
 5. Nucleotide sequence characterized in that it comprises a nucleotide sequence encoding the peptide according to any of claims 1-4.
 6. Vaccine, characterized in that it comprises the peptide according to any of claims 1-4 or an epitope thereof or the nucleotide sequence according to claim 5.
 7. Vaccine according to claim 6, characterized in that the peptide is mixed with a pharmaceutically acceptable carrier or diluent.
 8. Vaccine according to any of claims 6-7, characterized in that it comprises an antigen presenting cell, which has been preloaded with the peptide.
 9. Vaccine, characterized in that it comprises the T cell receptor against the peptides according to any of claims 1-4 or cells expressing said T cell receptor.
 10. Vaccine according to any of claims 6-9, characterized in that it also comprises one or more compounds selected from the group consisting of an adjuvant, one or more cytokines, antibodies directed against CD2, CD3, CD27,

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CD28 or other T cell surface antigens and helper epitopes to stimulate CD4+ or CD8+ T cells.

11. Method for the generation of antigen reactive tumor infiltrating lymphocytes, characterized in that it comprises the steps of:

- a. taking a sample of a melanoma from a patient;
- b. isolating the tumor infiltrating lymphocytes from the sample;
- c. reacting said lymphocytes with the peptides according to any of claims 1-4;
- d. isolating the lymphocytes binding to said antigen.

12. Tumor infiltrating lymphocytes characterized in that they are capable of binding to the peptides according to any of claims 1-4.

13. Vaccine characterized in that it comprises tumor infiltrating lymphocytes according to claim 12.

14. Conjugate of a peptide and a detectable marker, characterized in that the peptide according to any of claims 1-4.

15. Conjugate according to claim 14, characterized in that the detectable marker is a radionuclide.

16. Antibody, characterized in that it is directed to the peptide according to claims 1-4.

17. Vaccine, characterized in that it comprises the antibody according to claim 16.

18. Method for monitoring immunotherapy, characterized in that the presence of antibodies directed to the peptide according to claims 1-4, is detected from the serum of a patient.

19. Kit for the detection of antibodies according to claim 16, characterized in that it comprises conjugates according to claim 14 or 15.

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